



## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
 (Chapter II of the Patent Cooperation Treaty) 23 JUN 2005

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 03-F-042PCT	<b>FOR FURTHER ACTION</b> See Form PCT/IPEA/416	
International application No. PCT/JP2003/009742	International filing date ( <i>day/month/year</i> ) 31 July 2003 (31.07.2003)	Priority date ( <i>day/month/year</i> ) 31 July 2002 (31.07.2002)
International Patent Classification (IPC) or national classification and IPC C12M 3/00		
Applicant <b>JAPAN SCIENCE AND TECHNOLOGY AGENCY</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>1</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Box No. I Basis of the report</li> <li><input type="checkbox"/> Box No. II Priority</li> <li><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</li> <li><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li><input type="checkbox"/> Box No. VI Certain documents cited</li> <li><input type="checkbox"/> Box No. VII Certain defects in the international application</li> <li><input type="checkbox"/> Box No. VIII Certain observations on the international application</li> </ul>
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Date of submission of the demand 30 January 2004 (30.01.2004)	Date of completion of this report 15 October 2004 (15.10.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/009742

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- international search (under Rules 12.3 and 23.1(b))
  - publication of the international application (under Rule 12.4)
  - international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

- The international application as originally filed/furnished

the description:

pages \_\_\_\_\_ 1-27, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the claims:

pages \_\_\_\_\_ 2-4, 7-20, as originally filed/furnished

pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19

pages\* \_\_\_\_\_ 1, 6 received by this Authority on 30 August 2004 (30.08.2004)

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

the drawings:

pages \_\_\_\_\_ 1-13, as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3.  The amendments have resulted in the cancellation of:

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_ 5
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4.  This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- the description, pages \_\_\_\_\_
- the claims, Nos. \_\_\_\_\_
- the drawings, sheets/figs \_\_\_\_\_
- the sequence listing (*specify*): \_\_\_\_\_
- any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## Box No. IV Lack of unity of invention

1.  In response to the invitation to restrict or pay additional fees the applicant has:
  - restricted the claims.
  - paid additional fees.
  - paid additional fees under protest.
  - neither restricted nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
  - complied with.
  - not complied with for the following reasons:

Considering the description of the specification of the present application, the subject matters of claims 1-16 are considered to relate to an automatic culture apparatus that allows culture in a very clean environment, simply and efficiently under easy maintainability for a long period of time, with the environmental factors of the culture environment such as pressing pressure automatically controlled as desired in response to the progress of culture without requiring any special aseptic facility and without relying on highly skilled limited workers.

On the other hand, the subject matters of claims 17-20 are considered to relate to a culture apparatus equipped with a measuring instrument capable of non-invasively and three-dimensionally analyzing and measuring the quantity and/or quality of the cells or tissue derived from an organism.

Therefore, the matter common to the subject matters of claims 1-16 and the subject matters of claims 17-20 is a culture apparatus.

However, since the culture apparatus was already well known before the priority date of the present application, it is not considered that the subject matters of claims 1-16 and the subject matters of claims 17-20 share a technical feature contributing over the prior art, or that they are so linked as to form a single general inventive concept.

So, the present application is considered to include two inventions: an invention described in claims 1-16 and an invention described in claims 17-20.
4. Consequently, this report has been established in respect of the following parts of the international application:
  - all parts.
  - the parts relating to claims Nos. \_\_\_\_\_ 1-4, 6-20 \_\_\_\_\_

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/09742

**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-4, 6-20	YES
	Claims		NO
Inventive step (IS)	Claims	1-4, 6-16, 19, 20	YES
	Claims	17, 18	NO
Industrial applicability (IA)	Claims	1-4, 6-20	YES
	Claims		NO

**2. Citations and explanations (Rule 70.7)**

## Documents:

Document 1: JP, 63-283571, A

Document 2: JP, 58-155087, A

Document 3: JP, 2-96647, A

Document 4: JP, 2001-299383, A

Document 1 describes an automatic culture apparatus for performing culture in a culture vessel in the culture apparatus shaped like a box having a closed aseptic inner space, in which a culture chamber and a pre-arranging chamber respectively kept in an aseptic atmosphere provided in the said culture apparatus are partitioned by a partition wall (that is, "divided plural spaces in the box of a culture apparatus" are provided) (see page 3, lower left column, lines 6-7, and page 4, lower left column, lines 9-13).

Document 2 describes an automatic culture apparatus for cells, in which a culture solution feed device and discharge device, a culture condition observing device, and a transfer device for moving a culture vessel through these devices are installed.

Document 3 newly cited in the IPER describes that (1) a cultured material is disposed between at least a pair (that is, "two or more") electrodes, and (2) the electric capacity is measured for non-invasively measuring the cultured material.

Document 4 describes that the three-dimensional form of a colony of a microbe in a culture medium is obtained based on the projected image of light transmitted by laser beam irradiation in X, Y and Z directions (that is, non-invasive measurement, considering thickness).

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: V2

**[Claims 1-11 and 14-16]**

Both documents 1 and 2 belong to a common technical field of an automatic culture apparatus. So, a person skilled in the art could have easily further installed the culture solution feed device and discharge device, observing device and culture vessel transfer device described in document 2 in the automatic culture apparatus described in document 1.

Furthermore, an automatic culture apparatus, in which a gas incubator, an indication control device based on electric signals, a sterilized gas introduction setting device, a washing device, a drug adding device and the like are installed, was widely employed in this technical field before the priority date of the present application, and a person skilled in the art could have added those matters as required.

Therefore, a person skilled in the art could have easily conceived of arranging (1) divided plural spaces in the box of a culture apparatus and (2) various devices such as a gas incubator and a culture solution feed device in an automatic culture apparatus for performing culture in a culture vessel in the culture apparatus shaped like a box having a closed aseptic inner space.

However, documents 1 and 2 do not describe that the "divided plural spaces" are formed by partitioning an aseptic inner space into plural sections, and a person skilled in the art could not have easily conceived of this constitution either, even considering the common general technical knowledge prevailing before the priority date of the present application.

Therefore, the subject matters of the above-mentioned claims appear to involve an inventive step in view of the descriptions of the documents cited in the ISR and newly cited documents 1-4 and the common general technical knowledge prevailing before the priority date of the present application.

**[Claims 17 and 18]**

Since documents 2 and 3 belong to a common technical field of culture, a person skilled in the art could have easily employed the electric capacity measuring instrument using electrodes as described in document 3, as the culture condition observing device of the automatic culture apparatus described in document 2.

Therefore, the subject matters of the above-mentioned claims do not appear to involve an inventive step, since a person skilled in the art could have easily arrived at them based on the descriptions of documents 2 and 3 newly cited after the ISR.

**[Claims 19 and 20]**

Document 4 describes obtaining a three-dimensional form based on the projected image of light transmitted in three directions, but does not describe employing a displacement meter with an XY scanning device or a fluorometer with an XY scanning device as the means for measuring the three-dimensional form of a cultured material. A person skilled in the art could not have easily conceived of this constitution either, even considering the common general technical knowledge prevailing before the priority date of the present application.

Therefore, the subject matters of the above-mentioned claims appear to involve an inventive step in view of the descriptions of the documents cited in the ISR and newly cited documents 1-4 and the common general technical knowledge prevailing before the priority date of the present application.